

**Abstract of the Disclosure**

A phase-domain digital PLL loop is implemented using a hybrid of predictive and closed-loop architecture that allows direct DCO oscillator transmit modulation in the GFSK modulation scheme of "BLUETOOTH" or GSM, as well as the chip phase modulation of the 802.11b or Wideband-CDMA. The current gain of the DCO oscillator is predicted by observing past phase error responses to previous DCO corrections. DCO control is then augmented with the "open-loop" instantaneous frequency jump estimate of the new frequency control word.